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THE BRYOLOGIST.

VOL. VII.

SEPTEMBER, 1904.

No. 5.

HYOPHILA—A NEW GENUS TO THE UNITED STATES.

BY ELIZABETH G. BRITTON.

Prof. Max Fleischer, whose studies on the moss-flora of Buitenzorg have made him familiar with *Hyophila javanica* has called my attention to the fact that the much-named *Pottia riparia* Austin is really a species of *Hyophila*. I have made comparisons of the specimens and illustrations and find that he is correct.

The following generic description and synonymy have been adapted from those given by Brotherus in "Die Natürlichen Pflanzenfamilien":

Hyophila Brid. Bryol. univ. **1**: 760. 1826.

Rottleria Brid. Bryol. univ. **1**: 105. 1826. not Willd. 1797.

Pottia section *Hyophila* CM. Syn. Musc. **1**: 558. 1849.

Weisia section *Hyophila* Mitt. Jour. Linn. Soc. **12**: 135. 1869.

Plants growing in low, dark green or brown tufts. Stems radiculose at base, branching; central strand present. Leaves crowded, inrolled and curled when dry, spreading when moist; base clasping, oblong; apex elliptic, obtuse or acute, entire or serrate: costa stout, ending in or below the apex or rarely short excurrent; cells smooth or slightly papillose. Dioicous. Perichetial leaves smaller or not differentiated, Seta exserted, slender, erect. Capsule erect, mostly small cylindric, or oval; annulus differentiated and deciduous. Peristome lacking or rarely present and short; lid conic or rostrate, cells in straight rows; calyptra cucullate; spores small.

A genus represented in all the larger Continental areas and archipelagoes by seven-nine species, of which thirty-two, according to Brotherus, are known in America, twenty-two in South and five in Central America, four in the West Indies, and one in the United States.

HYOPHILA RIPARIA (Aust.) Fleischer, M. S. in Austin Herb.

Pottia riparia Aust. Musci App. No. 112. 1870.

Trichostomum Warnstorffii Limpr. Laubmoose. **1**: 587. Fig. 171. 1888.

Leptodontium Canadense Kindb. in Mac. Cat. **6**: 45. 1892.

Leptodontium riparium Britt. in Bull. Torr. Club, **19**: 275. 1892.

Didymodon riparium Kind. Br. Eu. & N. Am. **2**: 280. 1897.

Plants $\frac{1}{2}$ cm. high; stems branching, branches about 1 cm. long; leaves crowded when dry about $\frac{1}{2}$ mm. long; cells square and small .005-.013 mm.,

PLATE X. *Hyophila riparia*. This plate has been reduced one-half from the magnifications indicated for each figure.

1. Perichaetium dissected, showing one archegonium and four gemmiferous paraphyses, $\times 160$.
2. Branched paraphyses with gemmæ, $\times 160$.
3. & 4. Two paraphyses enlarged 340 diameters.
5. One of the gemmæ magnified 470 diameters.
The other gemmæ show various forms and have been enlarged 340 diameters.

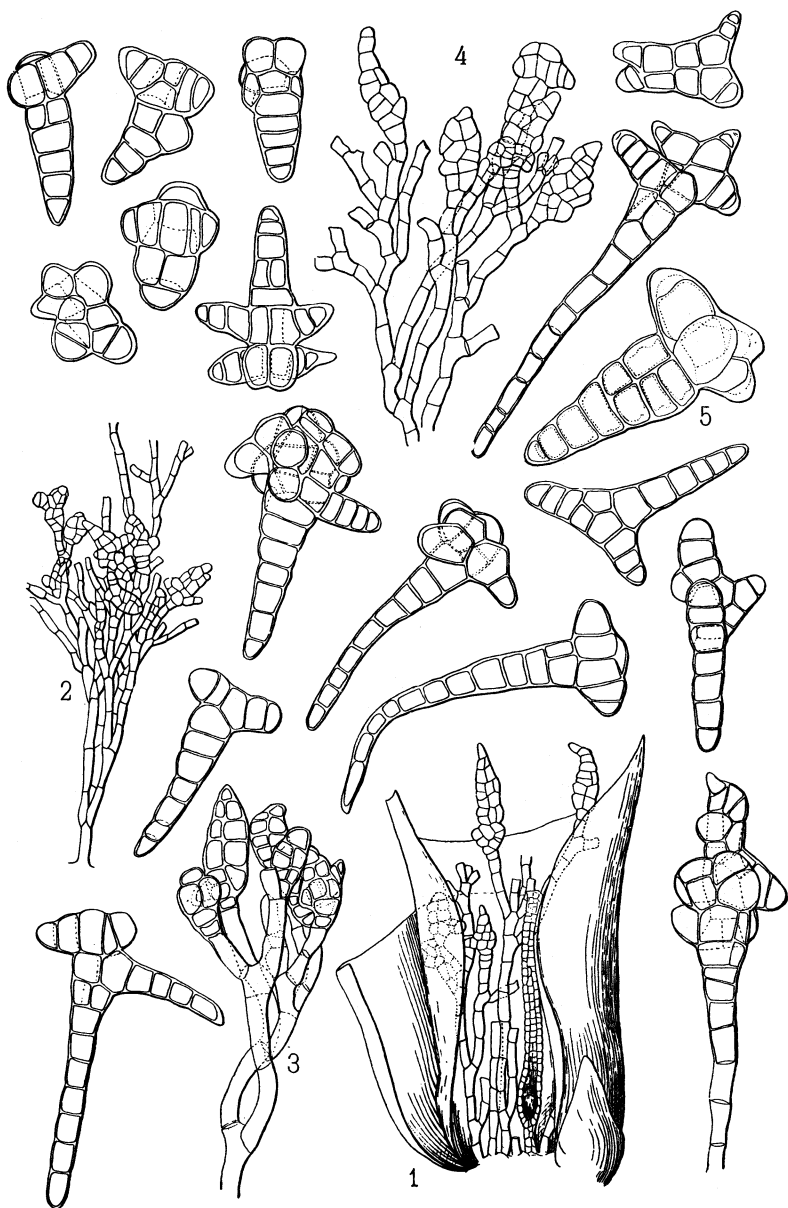


PLATE X. *Hyophila riparia*.

lower basal ones .012 x .027 mm.; apex serrate with irregular teeth; cells slightly papillose. Dioicous: antheridia in a terminal bud with small, blunt leaves. Archegonia few 1-10, paraphyses gemmiferous, branching into clusters of septate filaments bearing irregular multicellular gemmae, which produce protonema and serve as an asexual method of propagation! Seta 5-7 mm. long; capsule erect, 1 mm. long; lid conic; annulus large, double; spores not seen.

Rare in fruit, having been found but once by C. F. Austin "on rocks in a rivulet, Sussex County, N. J. September, 1867."

Illustration: Sullivant Icones Supplement, plate 21. 1874.

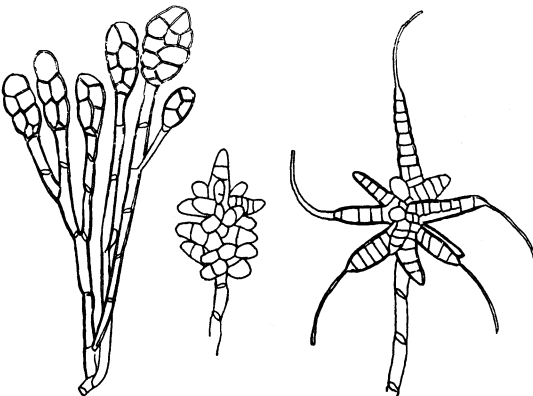
Habitat: "On moist rocks along streams" and shores of lakes.

Distribution: From Owen Sound, Ontario, to Pennsylvania and Ohio.

Type locality: "Palisades of Northern New Jersey and Southern New York," probably at Closter, N. J.

Also found by Austin at Hohokus, Pascack, and Little Falls, N. J.; Jordansville, Watkins Glen, Niagara Falls (Wolle). Chilson Lake (Mrs. Harris), Bashbish Falls (R. S. Williams), N. Y.; Springfield, Ohio (Miss Biddlecome), Bethlehem, (Rau & Wolle), Pocono Mt., Penn. (Porter), and at Owen Sound, Ontario (Macoun). Also in Europe on the shores of the Lake at Zürich, Switzerland, and at Schaffhausen on the Rhine.

The *gemmiferous paraphyses* which fill the perichaetial heads almost to the exclusion of the archegonia are characteristic of this species. The accompanying plate shows the diversity of form and size which occur in these gemmæ. No mention of them has been made in the description of *Pottia riparia*, but in *Trichostomum Warnstorffii* they have been described and figured by Limpricht, Laubmoose 388. Figs. 170-171, and by Correns, Unt. Verm. Laub. 99. Figs. 38-40.



Trichostomum Warnstorffii.

Fig. 171. Reduced from Limpricht.

Through the kindness of Dr. Warnstorff I have received a specimen of *Trichostomum Warnstorffii* Limpr. (Fig. 171,) collected by F. Weber "on walls wet by spray along the shores of Lake Zürich, Switzerland." This is one of the cotypes figured by Limpricht in the Laubmoose. It has only been found sterile!

There appears to be considerable variation in the shape and serration of the leaves as well as in the development of the papillae in American

specimens. In *Pottia riparia* (Aust. Musci App No. 112) the leaves are rounded, blunt at apex, like *Trichostomum Warnstorffii*, but slightly more serrate; *Leptodontium Canadense* Kind. has the leaves still more sharply serrate and the apex more acute; and in specimens collected by R. S. Williams, in the river below Bashbish Falls, the leaves are narrowly lanceolate, 2 mm. long and only $\frac{1}{2}$ mm. wide and the serrations are few and very small, the vein also is serrate on the back at apex. These differences are of degree, however, not of kind, and seem hardly specific, as the branched paraphyses and multiform gemmæ are present in all, and although there are slight differences in the shape of the gemmæ, all the other characters are so much alike that unless some difference in the capsules were found it is more than probable that they are the same species.

Prof. Max Fleischer has described and figured a new species from Java as *Hyophila Dozy-Molkenboeri* Fl. (Die Musci d. Flora v. Buit. 1: 329 fig. 57. 1904) in which there are also polymorphous gemmae borne on the ends of the paraphyses. It grows on stones and earth on walls and roadsides in Java, Sumatra, and Japan? and Nepal?

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LICHENS—STEREOCAULON, PILOPHORUS AND THAMNOLIA.

CAROLYN W. HARRIS.

Stereocaulon is a genus represented by a number of species, a few of which are quite common. The specimens are often very handsome, with their fruticulose, granulated podetia and numerous dark brown apothecia.

This genus belongs to the same family as the Cladonias, and resembles that genus in having a secondary thallus composed of stalk-like elevations called podetia. The primary thallus is deficient so that only a close observer will distinguish it. The secondary thallus is not hollow as in Cladonia, but is composed of arachnoid filaments of hypae, covered with a cartilaginous cortical layer on which are borne the gray branch-like granules known as phyllocladia. The podetia, especially in infertile specimens, are often covered with whitish soredia; these become squamose or pass into coral-like branchlets. The apothecia are usually numerous, in some species crowded, either terminal or lateral on the podetia; disk convex, becoming globose, dark reddish brown or nearly black.

The species of *Stereocaulon* are found largely in mountainous regions, either on sandy earth or on rocks. Their distribution is very general, being found throughout the world in the mountains; most of the species are found in North America.

When dry they are very brittle, but as they do not cling closely to the substratum can be collected at any time.

STEREOCAULON CORALLOIDES Fr. The primary thallus, which is composed of coarse granules, soon disappears, and is usually not found in fully developed specimens. The podetia—or secondary thallus—are short, united at the base and are much branched toward the top. The branches are densely covered with coarse, light gray granules.